IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: ZAUDERER *et al.*	Confirmation No.: 6770
Appl. No. 09/987,456	Art Unit: 1639
Filed: November 14, 2001	Examiner: Epperson, J.D.
For: ***In Vitro* Methods of Producing and Identifying Immunoglobulin Molecules in Eukaryotic Cells**	Atty. Docket: 1821.0070004/EJH/T-M

Declaration Under 37 C.F.R. § 1.132

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

I, the undersigned, Dr. Maurice Zauderer, residing at 44 Woodland Road, Pittsford, New York 14534, declare and state as follows:

1. I am the co-founder of Vaccinex, Inc., and have held the positions of President and Chief Executive Officer since April 6, 2001. I am also a co-inventor of the captioned patent application.

2. A current *curriculum vitae* is appended hereto as Exhibit B1.

3. I received my Ph.D. degree in cell biology from the Massachusetts Institute of Technology in 1972. From 1971 to 1975, I conducted postdoctoral research at various research institutions including the Albert Einstein College of Medicine in New York, and the National Institute for Medical Research in London. I was an Assistant Professor in the

Department of Biological Sciences at Columbia University from 1976 to 1983, and from 1984 to 2000, I was an Associate Professor in the Cancer Center and Department of Microbiology and Immunology at the University of Rochester. As shown on my attached *curriculum vitae*, I have also held various other academic positions, as well as participating in many professional activities and publishing numerous peer-reviewed articles in the field of immunology. Based on my education and experience, I am an expert in immunology and cell biology.

4. I have reviewed the above-identified patent application ("patent application"), the final Office Action dated January 27, 2005; PCT Publication No. WO 93/01296 to Rowlands *et al.* ("Rowlands"); PCT Publication No. WO 93/01296 to Zauderer ("Zauderer"); and Waterhouse *et al.*, *Nucleic Acids Res. 21*:2265-2266 (1993) (collectively, "the cited references"). I have also reviewed the pending claims of the patent application.

5. The invention claimed in the patent application relates to the field of immunology. More particularly, the invention relates to the art or field of methods of identifying, producing, and/or expressing immunoglobulins in eukaryotic cells. In my opinion, a person of ordinary skill in the art of immunology would have a Ph.D. degree in a field related to immunology or cell biology.

6. The claimed invention is directed to a method of selecting polynucleotides which encode an antigen-specific human immunoglobulin molecule by introducing into a population of mammalian host cells first and second libraries of polynucleotides encoding

immunoglobulin subunit polypeptides, wherein the libraries are constructed in vaccinia virus vectors, and the construction does not entail traditional homologous recombination.

7. It is my understanding, as explained to me by Vaccinex, Inc.'s patent attorneys, that the question of obviousness involves whether one of ordinary skill in the art would have been motivated by the prior art to make and use the claimed invention, and whether the claimed invention could have been practiced with a reasonable expectation of success. Using this standard of obviousness, it is my view that the disclosure of Rowlands in view of Zauderer and Waterhouse would not have motivated one of ordinary skill to combine these references, and would not have provided one of ordinary skill with any reasonable expectation of success in making and using the present invention. It is also my understanding, as explained to me by Vaccinex's patent attorneys, that a *prima facie* showing of obviousness can be overcome by a showing of objective indicia of non-obviousness of the claimed invention, such as unexpected results, a long-felt and unsolved need, commercial success, and failed attempts by others. It is my opinion that the response to the claimed invention in the field shows that there was a long-felt and unsolved need for it.

8. At the time of the present invention, there were two primary technologies used in the field of immunology to produce, identify, and select antigen-specific fully human antibodies from a large repertoire of possible immunoglobulins: transgenic animals expressing exogenous immunoglobulin genes and phage display. The transgenic animal technology, besides being time consuming and costly, is limited by the fact that antibodies to human proteins that are produced in a transgenic animal--for example, a mouse--having a

homolog of that protein may be biased toward epitopes that are different between the human and the animal host. However, these may not be the optimal target epitopes. This is a general problem (known as "tolerance") because almost all important human genes have a murine homolog and, on average, these are 90% homologous at the protein level. In some cases, where there is a very high degree of homology, no useful antibodies can be selected in immunoglobulin transgenic animals.

9. Phage display technology is also prone to numerous drawbacks. For example, it is not possible to generate full size human antibodies using phage display. Rather, phage display is limited to producing immunoglobulin fragments which are expressed as a fusion with a phage protein, with immunoglobulin fragments displayed on the surface of a phage particle. Based on my communications with others in the field, one of the major problems that is associated with using phage display to select antigen-specific immunoglobulins, is that, once the antigen-specific variable region is isolated from the phage and expressed as an IgG molecule, it often no longer recognizes the target antigen. That is, antigen-specificity was only achieved when the variable region was expressed in a prokaryotic host, incorporated onto a phage particle. Expression on phage particles results in another difficulty in screening for antibodies specific for membrane-associated proteins that are difficult to purify (e.g., G-protein coupled receptors), and which must therefore be screened as whole cells or cell fragments, because phage particles have non-specific interactions with mammalian cells, and thereby interfere in the antibody screening process. Furthermore, antibodies produced in prokaryotic cells do not undergo normal eukaryotic post-translational modification and assembly, and often lose specificity as a result of

incorrect folding or conformation in the abnormal physiological environment of the bacterial cell. *See, e.g.,* Specification Paragraph [0412] of the captioned application. The present invention overcomes these problems.

10. The Office Action states that it would have been obvious to one of skill in the art to combine Rowlands, Zauderer, Waterhouse, and Marasco to arrive at the methods of the claimed invention. In my opinion, one of skill in the art would not have found the claimed invention obvious in light of Rowlands, Zauderer, and Waterhouse. Detailed support for my opinion is set forth below.

11. Rowlands describes the use of known protein expression techniques using vaccinia virus vectors to express a single recombinant antibody. The expression of the single recombinant antibody was performed by introducing known, previously cloned sequences into vaccinia virus vectors by traditional homologous recombination. While Rowlands mentions that the vectors may be used to express a human antibody, the only example provided is of a humanized antibody, Campath-1H.

12. Zauderer describes introducing into eukaryotic host cells a single library of vaccinia virus expression vectors constructed from tumor-cell derived DNA, RNA, or cDNA to identify a single polypeptide of interest.

13. Waterhouse describes a method of using a Cre-*lox* site-specific recombination system in *E. coli* bacteria to pair an immunoglobulin light chain variable region fragment

and an immunoglobulin heavy chain variable region fragment carried in bacteriophage vectors so that they can be simultaneously co-selected. The expressed proteins are fusions of antibody fragments with a phage protein. Waterhouse suggests that the method "should allow the creation of extremely large combinatorial repertoires, " Waterhouse at 2266, col. 1.

14. In my view, the cited references do not teach all of the limitations of the claimed invention. For example, the references do not teach the introduction of *two* libraries of expression vectors into eukaryotic host cells to select an antigen-specific immunoglobulin.

15. It is also my opinion that one of skill in the art would not have been motivated to combine the cited references to introduce two separate expression libraries of immunoglobulin heavy and light chains into eukaryotic host cells to select a previously unknown antigen-specific immunoglobulin. One of ordinary skill would not have thought to combine Rowlands and Zauderer because, although they both describe the use of vaccinia virus vectors, Rowlands does not suggest the introduction of expression libraries into eukaryotic cells at all, and Zauderer does not suggest the introduction into host cells of two expression libraries that separately encode immunoglobulin heavy and light chains. Furthermore, one of ordinary skill in the art would not have combined Waterhouse with Rowlands and Zauderer because, while Waterhouse suggests providing separate repertoires of light and heavy chain antibody fragments, the suggestion is in the context of a method for improving phage display techniques. As discussed above, phage display is used to produce

libraries of human antibody fragments in prokaryotic host cells using bacteriophage as the vectors, where at least one of the antibody fragments is expressed as a fusion protein with a phage surface protein. There is no suggestion in Waterhouse that the types of improvements contemplated therein could be used in a eukaryotic system; nor would one of ordinary skill in the art consider them as features that could be expanded for use in eukaryotic systems. Given the above, one of ordinary skill in the art would not have had a reasonable expectation of success in combining Rowlands, Zauderer, and Waterhouse to arrive at the present invention.

16. It is also my opinion that there was a long-felt need for the present invention in the field of immunology and antibody selection. As discussed above, prior to the present invention, fully human antibodies were produced, identified, and selected by using transgenic animal technology, or human antibody fragments were produced, identified, and selected as bacteriophage fusion proteins by phage display techniques. The transgenic animal technology suffers from the drawbacks of time, expense, and the issue of tolerance that tends to produce antibodies that do not have useful activity. Phage display technology, developed to overcome the problems associated with the transgenic animal technology, requires expression of antibody fragments only, as fusion proteins with phage surface proteins, without the benefit of eukaryotic post-translational modification and assembly, and often results in antibodies that, once removed from the context of the fusion protein, lose the ability to specifically recognize target antigen. The present invention overcomes the drawbacks associated with both of these technologies.

17. By way of another example, antibody fragments generated by phage display can only be screened for antigen binding activity, not for functionality. For instance, antibody glycosylation is important to antibody function. Antibody fragments that are produced in a prokaryotic system as in phage display do not undergo eukaryotic glycosylation. Therefore, antibody fragments isolated by phage display, although they may bind antigen, cannot be tested, for example, for effector function, which depends on having a constant region and the presence of key glycosylation residues, without isolating the V region and recloning it as full size immunoglobulin.

18. Evidence of the long-felt need for the present invention can be seen by the number of strategic alliances that have been established between companies that would like to produce antigen-specific human monoclonal antibodies for therapeutic and diagnostic purposes and Vaccinex, Inc., exclusive licensee of the present invention. Attached hereto as Exhibits B2-B4 are copies of press releases announcing collaborations between Vaccinex, Inc., and the following companies: OPi, Lonza Biologics, and Biocon Limited. The fact that these companies are interested in pairing with Vaccinex, Inc. to use the technology of the present invention indicates that there is a desire and interest to use these methods for developing human antibodies because the prior art methods were not suitable for the needs of the marketplace.

20. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and

the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the present patent application or any patent issued thereon.

Respectfully submitted,

Maurice Zauderer

Maurice Zauderer, Ph.D.

Date: July 20, 2005

Curriculum Vitae **August 4, 2004**

Maurice Zauderer, Ph.D.

Education

Yeshiva University; NY, New York	B.S.	1966	Physics
Massachusetts Institute of Technology; Cambridge, Massachusetts	Ph.D.	1972	Cell Biology

Professional Positions:

1971-1975 Postdoctoral Fellow of the Helen Hay Whitney Foundation.
1972-1973 Postdoctoral Research with Dr. Matthew D. Scharff, Albert Einstein College of Medicine, NY.
1974-1975 Postdoctoral Research with Dr. Brigitte A. Askonas, National Institute for Medical Research, Mill Hill, London.
1975-1976 Visiting Scientist Laboratory of Cell Biology, Rome, Italy
1976-1983 Assistant Professor, Department of Biological Sciences, Columbia, University, NY, NY.
1984-2000 Associate Professor, Cancer Center and Department of Microbiology and Immunology, University of Rochester, Rochester, NY.
1984-1985 Visiting Scientist, Laboratory of Dr. Tak Mak, Ontario Cancer Institute, Toronto, Canada.
1990- 1997 Associate Professor, Strong Children's Research Center and Department of Pediatrics, University of Rochester, Rochester, New York.
1993-1994 Visiting Scientist, Laboratory of Dr. Alfred Singer, Experimental Immunology Branch, NCI, NIH, Bethesda, MD.
1997-2001 President and General Partner of Vaccinex, LP
2001- President & CEO, Vaccinex, Inc., Rochester, N.Y.

Other Professional Activities:

1984 National Science Foundation, Cellular Physiology Study Section.
1987-1989 Associate Editor, Journal of Immunology.
1990 Allergy and Immunology Study Section, Division of Research Grants, N.I.H.
1990 National Cancer Institute Special Review Committee

1992-1997	Multiple Sclerosis Society, Basic Science Study Section.
1994-1999	Associate Editor, Journal of Immunology
2003 -	Board Member, New York Biotechnology Association
2003 -	Board Member, Rochester Economic Development Board

Key Scientific Publications (partial listing):

Faherty, D.A., Johnson, D.R., and **Zauderer, M.** 1986. Origin and specificity of autoreactive T cells in antigen-induced populations. *J. Exp. Med.* 161:1293-1301.

Zauderer, M., Iwamoto, A., and Mak, T. 1986. Gamma gene rearrangement and expression in autoreactive helper T cells. *J. Exp. Med.* 163:1314-1318.

Johnson, D.R., Faherty, D.A., and **Zauderer, M.** 1986. TTGG-A--L specific memory B cells induced in low responder strains. *J. Immunol.* 137:2791-2795.

Johnson, D.R., Faherty, D.A., and **Zauderer, M.** 1986. Different T cell requirements for specific memory induction in normal and xid B cells. *J. Immunol.* 137:2796-2801.

Moynihan, J., Burstyn, D., and **Zauderer, M.** 1989. Autoreactive T cell response to resting or activated B cells. *Immunol.* 68:199-203.

Burstyn, D., and **Zauderer, M.** 1989. Requirements for stimulation of autoreactive T cells by thymic stroma. *J. Immunol.* 143:1422-1425.

Zauderer, M. 1989. Origin and Significance of autoreactive T cells. *Advances in Immunol.* 45:417-437.

Zauderer, M., and Natarajan, K. 1990. Imprint of thymic selection on autoreactive repertoires. *Immunological Reviews.* 116:159-170.

Fisher, D.J., Gigliotti, F., **Zauderer, M.** and Harmsen, A.G. 1991. Specific T-cell response to a *pneumocystis carinii* surface glycoprotein (gp120) after immunization and natural infection. *Infection and Immunity*,59: 3372.

Natarajan, K., Burstyn, D. and **Zauderer, M.** 1992. Major Histocompatibility Complex Determinants Select T-cell Receptor a Chain Variable Region Dominance in a Peptide-specific Response. *PNAS*, 89: 8874-8878.

Sahasrabudhe, D.M., Burstyn, D., Dusel, J.C., Hibner, B.L., Collins, J.L., and **Zauderer, M.** 1993. Shared T Cell-defined Antigens on Independently Derived Tumors. *J. Immunol.* 151:6302-10

Westbay, T.D., Dascher, C., Bavoil, P., and **Zauderer, M.** 1994. Dissociation of

immune determinants of outer membrane proteins of *Chlamydia psittaci* strain guinea pig inclusion conjunctivitis. *Infection and Immunity* 62:5614-23.

Westbay, T.D., Dascher, C., **Zauderer, M.**, and Bavoil, P. 1995. Deviation of immune response to *Chlamydia psittaci* outer membrane protein in LPS hyporesponsive mice. *Infection and Immunity* 63:1391-3.

Zauderer, M. 1996. Special delivery for peptide-stimulated immunity. *Nature Biotechnology* 14:703-705.

Moore, J.C., **Zauderer, M.**, Natarajan, K., and Jensen, P.E. 1997. Peptide binding to mixed isotype Ab^dEa^d class II histocompatibility molecules. *Mol. Immunol.* 34:145-155.

Zauderer, M., and Singer, A. 1997. Limiting dilution analysis of primary cytotoxic T cell precursors. *J. Immunol. Methods*, 208: 85-90.

Merchlinsky, M., Eckert, D., Smith, E., and **Zauderer,M.** 1997. Construction and characterization of Vaccinia direct ligation vectors. *Virology,* 238: 444-451.

Smith, E.S., Mandokhot, A., Evans, E.E., Mueller, L., Borrello, M.A., Sahasrabudhe, D.M., and **Zauderer, M.** 2001. Lethality-based selection of recombinant genes in mammalian cells: Application to identifying tumor antigens. *Nature Medicine*, 7:967-972.

Zauderer Patents and Patent Applications:

Application Title	Filing Date
T CELLS SPECIFIC FOR TARGET ANTIGENS AND VACCINES BASED THEREON	Sept. 22, 1997
METHODS FOR PRODUCING POLYNUCLEOTIDE LIBRARIES IN VACCINIA VIRUS	April 2, 2001
METHODS OF SELECTING POLYNUCLEOTIDES ENCODING ANTIGENS	Jan. 3, 2002
TARGETED VACCINE DELIVERY SYSTEMS	Apr. 12, 2001
GENE DIFFERENTIALLY EXPRESSED IN BREAST AND BLADDER, AND ENCODED POLYPEPTIDES	Apr. 4, 2001
METHODS OF PRODUCING A LIBRARY AND METHODS OF SELECTING POLYNUCLEOTIDES OF INTEREST	Mar. 28, 2001
METHOD OF SCREENING FOR THERAPEUTICS FOR INFECTIOUS DISEASES	Oct. 1, 2001
IN VITRO METHODS OF PRODUCING AND IDENTIFYING IMMUNOGLOBULIN MOLECULES IN EUKARYOTIC CELLS	Nov. 14, 2001
METHODS OF IDENTIFYING REGULATOR MOLECULES	Feb. 4, 2002
METHODS OF PRODUCING OR IDENTIFYING INTRABODIES IN EUKARYOTIC CELLS	Jan. 23, 2002

Vaccinex Research Awards:

Date	Grant Institution	Research Area	Award Amount
06/04	NIH/ National Institute of Aging	Monoclonal Antibody Therapy to Combat Osteoporosis	$217,632
05/04	National Institute Standards and Technology/ Advanced Technology Program	Development of Human Monoclonal Antibody Discovery Technology	$1,993,619
05/04	NIH/ National Cancer Institute	New Target Antigens for Prostate Cancer Immunotherapy	$599,735
04/04	NIH/National Institute Allergy and Infectious Diseases	Human Monoclonal Antibodies for Bioterrorism Defense	$1,358,678
02/04	NIH/ National Cancer Institute	Functional Identification of Cancer Regulators	$363,089
03/03	NIH/ National Cancer Institute	A Method to Identify Upstream Regulators of Oncogenes (CEA)	$433,400
02/03	New York State Department of Labor	BUSINYS - Research Training	$16,400
05/02	NIH/ National Institute of Aging	Genetic Selection System to Clone Osteogenic Regulators (Phase II)	$434,074

09/01	NIH/ National Institute Arthritis and Musculoskeletal and Skin Diseases	Genetic Selection to Clone Chondrogenic Regulators (Phase I)	$99,999
08/01	NIH/ National Cancer Institute	C35: A Target for Bladder and Breast Cancer Therapy	$908,660
05/01	New York State Department of Labor	High Tech Worker Training Program	$216,000
11/00	National Institute Standards and Technology/ Advanced Technology Program	Cancer Antigen Identification	$2,000,000
02/00	NIH/ National Cancer Institute	New Target Antigens for Prostate Cancer Vaccines	$477,824
07/99	US Army Breast Cancer Research Program	Target Antigens for Breast Cancer Vaccines	$297,689
		Total	$9,416,799.00799

Alliance Vaccinex

Lonza Biologics and Vaccinex Announce Strategic Alliance

07/11/2003

Lonza Biologics and Vaccinex Announce Strategic Alliance

Lonza Biologics (Lonza) and Vaccinex, Inc. today announced a strategic alliance that offers their respective clients a broad range of antibody discovery and manufacturing services.

Lonza will provide Vaccinex, its clients and co-development partners with access to its proprietary Glutamine Synthetase Gene Expression system, which offers important advantages including high yielding cell lines, ease of use and regulatory familiarity. In addition, for a period of five years, Lonza will provide dedicated access to its cGMP manufacturing facilities for the clinical production of recombinant proteins and antibody products. Vaccinex will offer antibody discovery services to Lonza's clients seeking to identify novel therapeutic antibodies. Vaccinex's library-based antibody discovery technology is unique in that it can directly express complete, fully human antibodies in mammalian cells. Both parties will assist each other in the marketing of their respective antibody service offerings to clients.

"By coordinating the discovery and clinical manufacturing processes, we are able to offer our clients a more efficient and predictable pathway for product development. In addition, Vaccinex, our clients and co-development partners will benefit from obtaining access to Lonza's world-class antibody manufacturing facilities and expertise," said Dr. Maurice Zauderer, President and CEO of Vaccinex.

"Integrating Vaccinex's innovative library-based antibody discovery technology with the GS Gene Expression System will offer true value to customers by producing substantial quantities of high quality, fully functional human monoclonal antibodies that would have been difficult to identify with other systems. Moreover this relationship will facilitate a rapid and smooth transition from product discovery to clinical manufacture," said Markus Gemuend, CEO of Lonza Group.

About Lonza
Lonza is a Life Sciences driven company headquartered in Switzerland, with sales of CHF 2.54 billion in 2002 and operating 18 production and R&D facilities in 8 countries. It employs 6 200 people worldwide and is the leading custom manufacturer of active chemical ingredients, intermediates and biotechnology solutions to the pharmaceutical and agrochemical industries. It also offers organic intermediates for a wide range of applications and provides antimicrobial and associated products as well as polymer intermediates and compounds. For more information on Lonza please visit the company's website at www.lonza.com.

About Vaccinex, Inc.
Vaccinex is a privately held biotechnology company engaged in the discovery and development of novel therapeutic antibodies. Therapeutic antibodies have become one of the largest and fastest growing sectors of biotechnology, currently representing approximately 20% of all drugs in the biotechnology pipeline. Vaccinex's antibody discovery platform is one of the only library-based antibody technologies that can directly express complete, fully human antibodies in mammalian cells. The company is commercializing this technology by offering antibody discovery services to clients worldwide and is developing its own proprietary therapeutic products, initially focused on cancer. The firm is headquartered in Rochester, New York and currently has over 30 employees. For additional information, please visit the company's website at www.vaccinex.com.

For further information please contact:

Lonza Group Ltd
Walter Eschenmoser
Communications & Investor Relations
Tel +41 61 316 8363
Fax +41 61 316 8220
walter.eschenmoser@lonza.com

Vaccinex, Inc.
Stan Holland
1895 Mt. Hope Avenue
Rochester, NY 14620
Tel +1 585.271.2700
Fax +1 585.271.2766

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12/16/2003	Genentech and Lonza announce Manufacturing Agreement
11/07/2003	Publication regarding changes in voting rights according to Art. 21 SESTA
07/23/2003	Organizational changes MC
07/23/2003	Lonza - Half-Year Report 2003
07/23/2003	Webcast Analyst Conference of Lonzas 2003 Half Year Results
07/14/2003	Microbial manufacturing agreement
07/11/2003	Alliance Vaccinex
06/16/2003	Announcement Half Year 2003 Results
06/12/2003	Price Increase
05/23/2003	Publication regarding changes in voting rights according to Art. 21 SESTA
05/19/2003	Up to 90 % of Lonza Biologics Capacity Expansion in Portsmouth, NH, now under contract
05/19/2003	Lonza revises 2003 outlook
05/15/2003	Publication regarding changes in voting rights according to Art. 21 SESTA
03/27/2003	Microbial fermentation
03/26/2003	Ordinary Shareholders' Meeting of Lonza Group Ltd
03/13/2003	Price Increase
03/11/2003	Announcement Annual Report 2002
03/01/2003	Annual Report 2001
02/27/2003	Multi-year strategic service level
02/25/2003	Proposal Board of Directors
02/25/2003	Oligonucleotide business
01/23/2003	2002 Results Webcast Conference Call on Demand
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Biocon ties up with Vaccinex to co-develop antibody drugs

The Business Standard: November 19, 2004

Bangalore: Biocon Limited, the Bangalore-based biotechnology company and Vaccinex Inc. have announced a broad strategic partnership to discover and co-develop at least four therapeutic anti-body products.

Vaccinex is a New York-based privately held biotechnology company engaged in the discovery and development of novel therapeutic antibodies. Biocon and Vaccinex will jointly work to identify promising antibody candidates and move them rapidly into clinical development.

Both companies plan to focus on antibody products directed at cancer, inflammation and auto-immune diseases. As part of the collaboration, Biocon will also make an equity investment in Vaccinex.

"Vaccinex has a strong discovery-led platform that will be beneficial to Biocon and the two companies will work jointly," Kiran Mazumdar-Shaw, chairman and managing director, Biocon Limited, said.

The collaboration combines Vaccinex's capabilities to discover fully human monoclonal antibodies using its proprietary anti-body discovery technology and Biocon's expertise in clinical research and biologics manufacturing.

According to Maurice Zauderer, president and CEO of Vaccinex, "By combining our respective skills and knowledge, this collaboration will allow Biocon and Vaccinex to accelerate introduction of , high value therapeutic antibody products in India and the West."

Vaccinex has also accepted the nomination of Dr Bala Manian, the eminent California scientist and entrepreneur as Biocon's nominee director to the Vaccinex board of directors. This will take effect once regulatory procedures are completed.

Vaccinex, with the help of its proprietary vaccinia vector technology, has developed the only library-based antibody discovery platform capable of directly expressing bivalent, fully huma antibodies in mammalian cells.

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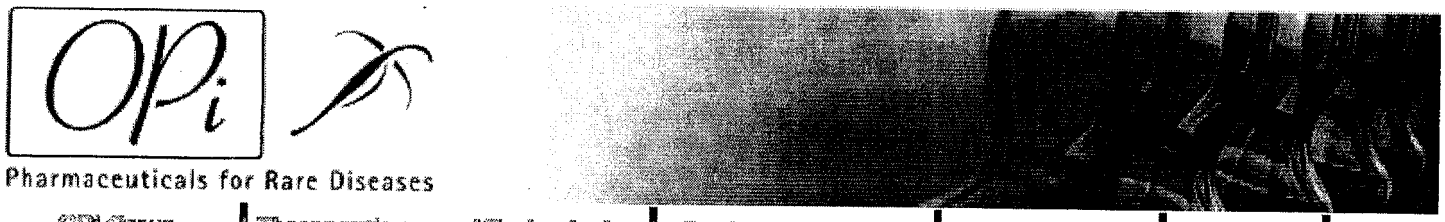

OPi and Vaccinex announce antibody collaboration

Lyon, France and Rochester, USA, june 30, 2004. OPi and Vaccinex announced today a strategic collaboration to discover and develop novel monoclonal antibodies for the treatment of certain rare haematological diseases. Vaccinex will use its proprietary antibody discovery technologies to create fully human antibodies with the same specificity and function as OPi's panel of existing mouse monoclonal antibodies, some of which have already shown promising results in human trials. Under the agreement, Vaccinex will have the opportunity to participate as a co-development partner in certain markets.

Using its proprietary vaccinia vector technology, Vaccinex has developed unique library-based antibody discovery platforms capable of directly expressing bivalent, fully human antibodies in mammalian cells. Unlike antibody systems utilizing phage display libraries or transgenic mice, Vaccinex's technology offers the potential to directly generate fully functional antibodies against difficult targets such as homologous proteins and multi-pass membrane receptors. In addition, Vaccinex's technology can be used to fully humanize mouse and other non-human antibodies.

"We are excited about this collaboration with Vaccinex", said Gilles Alberici, CEO, President and founder of OPi. "Since OPi's inception four years ago, we have demonstrated our ability to grow in developing new compounds. Vaccinex's innovative antibody discovery technology will enable us to make a technological leap to develop new fully human antibodies aiming at treating haematological diseases."

Maurice Zauderer, President and CEO of Vaccinex commented, "We are very enthusiastic about applying our antibody discovery competencies to promote the development of new treatments for blood-based cancers and other diseases. We are pleased to be working with OPi's dedicated group of scientists, physicians and pharmacists to successfully bring product candidates into clinical development."

OPi, Pharmaceuticals for Rare Diseases

Founded in 1999, OPi is a European integrated biopharmaceutical company whose mission is to develop and market pharmaceuticals aimed at treating patients suffering from rare and severe diseases. The company has already one product approved in Europe and several products under clinical development. Innovation and medical needs are the mainstays of OPi's approach. For additional information, please visit the company's website at www.orphan-opi.com.

Vaccinex

Vaccinex is a privately held biotechnology company engaged in the discovery and development of novel therapeutic antibodies. The company is leveraging the capabilities of its proprietary antibody technology to develop its own pipeline of therapeutic antibody products, while using near-term revenues from antibody discovery collaborations to help support its operating costs. The firm is headquartered in Rochester, New York and currently has 37 employees. For additional information, please visit the company's website at www.vaccinex.com.

Contacts:

OPi
Phone. +33 (0)4-37-49-85-97 - Fax. +33 (0)4-37-49-85-99
e-mail : opi@orphan-opi.com - Web Site : www.orphan-opi.com

Vaccinex

Phone. 585 271 2700 (x 102) - Fax. 585 271 2764
e-mail : sholland@orphan-opi.com - Web Site : www.vaccinex.com

Topic updated on june 2, 2005, 11:52:13